

Personal Virtual Bridged Local Area Networks

ABSTRACT

A mechanism for segregating traffic amongst STAs that are associated with a bridge, referred to herein as the personal virtual bridged local area network (personal VLAN), is based upon the use of a VLAN to segregate traffic. The IEEE 802.1Q-1998 (virtual bridged LANs) protocol provides a mechanism that is extended by the invention to partition a LAN segment logically into multiple VLANs. In the preferred embodiment, a VLAN bridge forwards unicast and group frames only to those ports that serve the VLAN to which the frames belong. One embodiment of the invention extends the standard VLAN bridge model to provide a mechanism that is suitable for use within an AP. In a preferred embodiment, the Personal VLAN bridge extends the standard VLAN bridge in at least any of the following ways: VLAN discovery in which a personal VLAN bridge provides a protocol for VLAN discovery; VLAN extension in which a Personal VLAN allows a station to create a new port that serves a new VLAN, or to join an existing VLAN via an authentication protocol; Logical ports in which a Personal VLAN bridge can maintain more than one logical port per physical port, and bridges between ports of any kind; and cryptographic VLAN separation.